JOHN A. LOVE
Governor

C. J. KUIPER
State Engineer

DIVISION OF WATER RESOURCES

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December 2, 1970

Mr. Clarence J. Kuiper
State Engineer
Division of Water Resources
101 Columbine Building
1845 Sherman Street
Denver, Colorado 80203

Re: Division Engineer's
Annual Report.

This Annual Report for Division No. 5 for the water year ending November 30, 1970 is as follows:

1. Introductory Statement.

A. Division 5 consists of all the Colorado River Basin, including all of its tributaries from the Continental Divide through its course within the State of Colorado to the Utah State line; excluding only the Gunnison River Drainage Basin but including the White River Drainage, which is located in Division 6, only and expressly provided by law as under judiciary, decretal rule by the Water Judge presiding in the Division 5 water court.

The major tributaries of the Colorado River from its headwaters to the State line are the North Fork of the Colorado, Willow Creek, Fraser River, Williams Fork, Troublesome Creek, Blue River, Muddy Creek, Eagle River, Roaring Fork, Divide Creek, Mamm Creek, Rifle Creek, Parachute Creek, Roan Creek, Plateau Creek and the Big Salt Wash.

The Major Population Centers are:

Name	Stream	Growth Pattern		Approx. Pop.
		Resident	Rec. & Tourist	Max.
Grand Lake	Colo. River	1/4	3/4	" 5,000
Granby	Fraser-Colo. R.	2/3	1/3	" 4,000
Fraser-Winter Pk.	Fraser R.	1/5	4/5	" 6,000
Hot Sulphur Spgs.	Colo. R.	1/3	2/3	" 500

1. Introductory Statement

A. Winter precipitation was unusually heavy along with cold weather approximately 7° below average, the spring run-off was slow. April had exceptionally cold weather and therefore basin storage was held back. The basin water supply was increased through May, June and July and no administration on Trans-mountain Diversions was needed, no curtailment on any TMD was needed.

Elevation from Grand Junction to Continental Divide ranges from approx. 4,000 ft. to 14,000 feet. Major water use is for irrigation of crops, municipal and power generation.

The major industries are timber, power and mining. The growth potential is particularly unlimited in the mining industry both in oil, gas and mining.

Introductory Statement Continued.

Name	Stream	Growth Pattern		Approx. Pop. Max.
		Resident	Rec. & Tourist	
Kremmling	Colo. Muddy, Blue	7/8	1/8	750
Climax	Blue River	----	------	-------
Breckenridge	Blue R.			983
Frisco	Blue R.			360
Dillon	Blue R.			814
Minturn	Eagle R.	----	------	-------
Vail	Eagle R.	----	------	-------
Eagle	Eagle R.	----	------	546
Gypsum	Eagle R.	----	------	400
Aspen	Roaring Fork	----	------	1,700
Basalt	Roaring Fork	----	------	250
Carbondale	Roaring Fork	----	------	650
Glenwood Springs	Roaring Fork & Colo. R.	----	------	5,150
New Castle	Colo. R.	----	------	450
Silt	Colo. R.	----	------	400
Rifle	Colo. R.	----	------	2,200
Grand Valley	Colo. R.	----	------	245
DeBeque	Colo. R.	----	------	172
Collbran	Plateau Cr.	----	------	310
Palisade	Colo. R.	----	------	860
Grand Junction	Colo. R.	----	------	22,750
Fruita	Colo. R.	----	------	1,850
Loma- Mack	Colo.	----	------	------

11 PERSONNEL

Name	Position	District	Months Worked	Mileage*
Smith, Donald L.	Division Engineer		Annual	13,426.8
Bloye, E.D.	Assistant Div. Engineer		Annual	1,110.0
Else, Dorothy M.	Clerk Typist		Annual	-0-
Anderson, George	WC	70	8	9,917
Bieser, Robert W.	WD	72	6	2,858
Bissell, Nicholas W.	WD	38	4	2,761
Callicotte, Stephen H.	WC	38	7	4,676
Clem, John Colin	WC	45	8	4,842
Cowden, Lewis E.	WC	36 & 37	9	10,640
Forster, Charles A.	WC	53 & 53	9	6,093
Gibson, Veryl	WD	72	5	5,968
Gilbreath, Douglas L.	WD	72	4	1,522
Hawkins, Danny R.	WC	72	6	2,667
Hawkins, Melvin	WD	39	8	11,625
Held, J. Wesley	WD	72	6	2,560
Kenney, Donald L.	WC	72	6	4,973
Nelson, Gordon Glen	WD	45	3	1,054
Rager, Cletus	WD	45	5	4,023
Saunders, Woodrow	WC	72	Annual	17,615
Yeoman, Richard	WD	45	4	2,786

* Includes November 1969

111 Water Supply
F.

TRANS-MOUNTAIN DIVERSIONS
ANNUAL - ACRE FEET

	1965	1966	1967	1968	1969	1970
Adams Tunnel (Platte)	211,000	235,400	267,500	198,600	170,500	
Berthoud Pass (Platte)	1,190	591	793	708	586	
Boreas (Platte)	52	-0-	-0-	42	-0-	
Busk-Ivanhoe (Ark.)	5,690	3,880	4,830	7,130	6,750	
Columbine D. (Ark.)	2,030	984	1,570	1,750	1,910	
Eureka D. (Platte)	190	114	188	63	116	
Ewing D. (Ark.)	1,380	529	757	1,020	1,250	
Fremont Pass (Ark.)	-0-	-0-	-0-	-0-	-0-	
Grand River D. (Platte)	16,370	14,240	8,950	16,260	18,350	
Homestake T. (Pl. - Ark.)		(6-6)	4,420	20,370	30,770	
Hoosier Pass (Platte)	8,040	7,860	9,930	10,080	7,750	
Moffat - E.P. (Platte)	77,300	47,690	52,210	67,340	38,730	
Roberts Tunnel E.P. (Platte)	30,290	26,580	52,950	45,660	48,610	
Twin Lakes (Ark.)	45,720	38,490	47,550	49,860	50,570	
Williams Fork T. @ Jones Pass (Platte)	5,600	7,800	4,800	5,760	3,160	
Wurtz D. (Ark.) Tennessee Pass	3,410	1,370	1,560	2,270	2,390	
Wurtz Ext. near Tenn. Pass				347	544	

VI. DAMS

A. - - -

B. Registered Livestock Water Tanks

District	Name	Permit No.	Stream	Height Ft.	Cap. AF.	Ins. This Year
36	Bumgarner, Welton	12320	Blue River	11	3.0	
37	None on file					
38	Arlian, Brice	10492	East Coulter	Pit	1/3	
	Bureau of Land Mgmt.	10018	Trib. to West Sopris	14.8	3.0	
	Bureau of Land Mgmt.	10019	Trib. to East Sopris	18.5	4.0	
	Favre, Vinance	11938	Trib. to Cattle Creek	6.0	1/3	
	Favre, Vinance	11939	Trib. to Cattle Creek	5.0	1/4	
	Favre, Vinance	11940	Trib. to Cattle Creek	5.0	1/4	
	Favre, Vinance	11941	Trib. to Cattle Creek	5.0	1/3	
	Favre, Vinance	11942	Trib. to Cattle Creek	5.0	1/3	
	Favre, Vinance	11943	Trib. to Cattle Creek	5.0	1/4	
	Favre, Vinance	11944	Trib. to Cattle Creek	6.0	1/3	
	Forest Service (USDA)	8785	Trib. to Cattle Creek	8.0	.10	
	Forest Service (USDA)	8786	Trib. to Cattle Creek	9.0	.15	
	Forest Service (USDA)	8787	Trib. to Frenchman Creek	8.0	.10	
	Forest Service (USDA)	8788	Upper North Fork Cattle Creek	8.0	.10	
	Forest Service (USDA)	8789	Bionaz Gulch	8.0	.10	
	Forest Service (USDA)	8790	Trib. to Cattle Creek	8.0	.10	
	Forest Service (USDA)	8791	Trib. to Devils Hole Cr. & Colo R.	8.0	.10	
	Forest Service (USDA)	8792	North Taylor Creek	8.0	.10	
	Forest Service (USDA)	8793	Trib. to Cinamon Creek	8.5	.10	
	Forest Service (USDA)	8794	Cinnamon Creek	8.0	.10	
	Forest Service (USDA)	8795	Trib. to Cattle Creek	9.0	.20	
	Forest Service (USDA)	8796	Wheatly Gulch	8.0	.10	
	Forest Service (USDA)	8797	Trib. to Miller Cr. & Fryingpan R.	8.0	.10	
	Forest Service (USDA)	9883	Trib. to Cattle Creek	6.0	.25	
	Forest Service (USDA)	9884	Trib. to Cattle Creek	7.0	.25	
	Forest Service (USDA)	9905	Trib. to Cattle Creek	10.0	.25	
	Phipps, Lee J.	10996	Barbers Gulch	13.5	1.3	

39	Bureau of Land Mgmt.	9299	West Salt Creek	17.5	8
39	Bureau of Land Mgmt.	9302	West Salt Creek	18.6	7.0
39	Bureau of Land Mgmt.	9303	West Salt Creek	19.8	5.5
39	Bureau of Land Mgmt.	9304	East Salt Creek	18.0	6.5
39	Bureau of Land Mgmt.	9305	East Salt Creek	19.0	1.4
39	Bureau of Land Mgmt.	9306	East Salt Creek	17.0	1.2
39	Bureau of Land Mgmt.	9307	East Salt Creek	19.0	9.6
39	Bureau of Land Mgmt.	9312	Dry Canyon	19.0	6.25
39	Bureau of Land Mgmt.	9314	East Salt Wash	16.3	8.0
39	Bureau of Land Mgmt.	9764	Trib. to Salt Creek	15.5	2.5
39	Forest Service (USDA)	9697	Side draw of Hadley Gulch	4.7	0.1
39	Forest Service (USDA)	9698	Side draw to Hadley Gulch	7.2	0.25
39	Forest Service (USDA)	9775	Intermittent trib. of Deep Creek	Pit	0.01
39	Forest Service (USDA)	9776	Intermittent trib. of Deep Cr.	Pit	0.01
39	Forest Service (USDA)	9777	Intermittent trib. of Deep Cr.	Pit	0.01
39	Forest Service (USDA)	9778	Inter. trib. of Meadow Cr.	Pit	0.01
39	Forest Service (USDA)	9779	Inter. trib. of Meadow Cr.	Pit	0.01
39	Forest Service (USDA)	9780	Inter. trib. of Meadow Cr.	Pit	0.01
39	Forest Service (USDA)	9781	Inter. trib. to Meadow Cr.	Pit	0.01
39	Forest Service (USDA)	9813	E. Rifle Creek	Pit	0.01
39	Forest Service (USDA)	9814	E. Rifle Creek	Pit	0.01
39	Forest Service (USDA)	10150	Side drainage of Meadow Cr.	Pit	0.2
39	Forest Service (USDA)	10217	George Creek	Pit	0.01
39	Kline & Krauth, Inc.	12262	East Elk Creek trib. Elk Cr.	10.0	7.6
50	Homer L. Roesener	12339	Gore Pass Creek	12.0	2.0
50	Robert R. Buerger	12354	Trib. to Deep Creek	15.0	2.0
50	Bureau of Land Mgmt.	9323	Trib. to Colo. River	14.5	1.0
50	Bureau of Land Mgmt.	9324	Trib. to Cow Gulch	15.8	1.5
50	Bureau of Land Mgmt.	12263	Trib. to Waste Cr. Trib. Colo.R.	17.0	3.5
50	Wm. Brown	9950	Trib. to Big Muddy Creek	18.0	1.5
50	Wm. Brown	9951	Trib. to Big Muddy Creek	15.0	1.0
50	Red Ritschard	9925	Trib. to Hill Creek	14.0	1.0
51	Eddie Linke, Jr.	11535	Trib. to Eight Mile	12.0	6.0
51	C.C. Shoffner	8868	Trib. to Battle Creek	12.2	2.0
51	George C. Carlson, Jr.	11775	Trib. to Trail Creek	18.0	5.1
51	Wayne Harbert	9679	No Name Trib. to Ten Mile	10.6	1.0
51	Sholl Ranches, Inc.	9689	Rock Creek	14.0	9.0
51	Charley Shore	9882	No Name Trib. to Copper Creek	14.0	3.5

52	Forest Service (USDA)	8438	dry drainage trib. to Piney River	8.0	0.05
52	Forest Service (USDA)	8439	trib. to Piney River	8.0	0.05
52	Forest Service (USDA)	8445	dry drainage to Piney River	9.0	0.25
52	Forest Service (USDA)	8446	dry drainage trib. to Piney River	8.0	0.05
52	Forest Service (USDA)	8447	unnamed drainage trib. to Piney River	8.0	0.05
52	Forest Service (USDA)	8448	Cole Black Creek trib. to Piney River	9.0	0.05
52	Forest Service (USDA)	8449	Unnamed drainage So. Fork Piney River	7.0	0.05
52	Forest Service (USDA)	8450	drainage trib. to Cole Black Creek	9.0	0.1
52	Forest Service (USDA)	8451	Cole Black Creek trib. to Piney River	9.0	0.05
52	Forest Service (USDA)	8452	unnamed trib. of Piney River	8.0	0.05
52	Forest Service (USDA)	8453	unnamed trib. to Piney River	8.0	0.05
52	Forest Service (USDA)	9189	trib. to West prong of S. Fk. Piney	6.0	0.3
52	Forest Service (USDA)	9190	drainage trib. to Rock Creek	6.0	0.2
52	Forest Service (USDA)	9191	dry drain. trib. W. prong S. Fk. Piney	10.0	0.4
52	Forest Service (USDA)	9192	dry drainage head of Rock Creek	9.0	0.5
52	Forest Service (USDA)	9216	trib. to Big Alkali Creek	6.0	0.02
52	Forest Service (USDA)	9275	Trib. of Cinnamon Creek	8.0	.70
52	Forest Service (USDA)	9276	Deadmans Creek	8.0	.25
52	Forest Service (USDA)	9277	Cinnamon Creek	6.0	.25
52	Forest Service (USDA)	9278	Cinnamon Creek	8.0	.70
52	Forest Service (USDA)	9279	Unnamed trib. of Cinnamon Creek	6.0	.25
52	Forest Service (USDA)	9981	dry drain. Little Dutton Draw, Big Alkali	7.0	0.10
52	Forest Service (USDA)	10114	Unnamed drain. trib. to Piney River	8.0	0.1
53	Forest Service (USDA)	8524	Trib. to Flag Creek	9.9	Less 1.0
53	Forest Service (USDA)	9776	Side Draw of Wagon Gulch	10.0	3.5
53	Forest Service (USDA)	9823	Branch of Rock Creek	7.0	0.1
53	R.E. Jones	9997	Trib. to Toponas Creek	17.0	2.0
53	R.E. Jones	9998	Trib. to Toponas Creek	19.00	3.5
53	Forest Service (USDA)	10360	Side drainage of Upper Short Creek	6.0	0.1
53	Forest Service (USDA)	10361	Side drainage of Lake Creek	4.0	0.1
53	Forest Service (USDA)	10362	Lower Short Creek Side Draw	Pit	0.1
53	Forest Service (USDA)	10362	Lower Short Creek side drainage	8.0	0.5
53	Forest Service (USDA)	10364	Lower Short Creek	Pit	0.1
53	Forest Service (USDA)	10365	Lower Short Creek	Pit	0.1
53	Raymond Horn	10608	Trib. to Egeria Creek	16.0	1.0
53	Judge M. Lyle, M.D.	10659	Johns Creek	18.0	1.6
53	Raymond Horn	10669	Trib. to Egeria Creek	14.0	10.0

53	Kelly Klumker	10678	Trib. to Egeria Creek	9.0	0.5
53	Kelly Klumker	10679	Trib. to Egeria Creek	12.0	0.7
53	W.R. Leroux	10739	Trib. to Colorado River	8.8	less than 1.0
53	Junior Perry	11755	Dry Draw trib. to Egeria Crk.	9.0	0.7
53	Kelly Klumker	11771	Wohler Crk. trib. to Egeria	13.0	1.20
53	Circle R Ranch	12137	unnamed Trib. to Toponas Crk.	12.0	4.5
72	Malcolm C. Jolley	12261	Trib. to Alkali Creek	8.2	0.21

Operating Plan For Colorado River Reservoirs Hammered Out By Board

By WILLIAM H. NELSON
Sentinel Staff Writer

DENVER — After Gov. John A. Love questioned the wording of an amendment proposed by Upper Colorado River Commission committees to long-range operating criteria for Colorado River reservoirs Thursday, the commission argued at length over words and figures.

The commission sent the proposed statement back to the legal committee twice for revision.

At the vortex of the argument that kept going in circles was an old problem: How to protect rights of Colorado, Utah, Wyoming, and New Mexico to their theoretical shares of Colorado River water while generating power at the hydro-electric plants of the Colorado River Storage Project to earn money to pay part of the costs of participating irrigation projects.

Only an expert in western water law in general and the "law of the Colorado River" in particular could understand the shadings of meanings of various phases and figures considered by the commission.

Love opposed any wording that could be constructed in the future as consenting to permanent deliveries of water above the commitment of the Colorado River Compact of 1922. The commitment is to deliver 75 million acre-feet in any 10-year period. This averages 7.5 million acre-feet of water a year, but because of the vagaries of weather, the flow of the river goes up and down.

The version finally accepted provides that the releases of water from Lake Powell during the time projects are being built in Colorado, Utah, New Mexico, and Wyoming to put water to use are estimated at 8 million acre-feet annually.

The wording proposed by the commission would make the releases subject to provisions in the Colorado River Basin Project Act of 1968. This law authorized the Central Arizona Project and five irrigation units in Colorado West.

Love objected to the use of 8.23 million acre-feet, and Jack Gage, attorney of the Wyoming delegation, urged a figure not tied to any document or concept.

The Upper Basin states oppose any implication that they are committed to deliver 750,000 acre-feet of water to Mexico under a 1944 international treaty. The 8.23 million figure covers the average annual delivery of 7.5 million acre-feet plus 750,000 acre-feet, either by coincidence or intention. Because 20,000 acre-feet of the deliveries would come from the flow of the Paria River in Utah, the total is that much below 8.25 million acre-feet.

The commission instructed Ival Goslin, executive director, to contact Governors Calvin Rampton of Utah, David Cargo of New Mexico, and Stanley K. Hathaway of Wyoming to add their signatures to that of Love to a letter to Walter Hickey accompanying a detailed statement on amendments the four states want to the long-range criteria.

Copies of the statement will go to members of the congressional delegations of the four states.

Goslin was directed to seek a personal interview with Hickel to explain the statement.

The secretary has until July 1 to adopt the long-range criteria. He had asked comments from governors of the seven Colorado River Basin states by April 1.

The Westerner

Commission Staff Urges End To 1962 Reservoir Criteria

Fifth and Final in a Series

By WILLIAM H. NELSON

The staff and legal and engineering committees of the Upper Colorado River Commission has prepared a lengthy statement in support of termination of the 1962 reservoir filling criteria.

The commission will consider the statement at a meeting Thursday in Denver.

A summary of the arguments prepared by the commission staff follows:

A. The 1962 reservoir filling criteria must be terminated in their entirety because they are not compatible with operating criteria to be adopted under Section 602 of P.L. 90-537.

B. To continue charging Hoover power generation "deficiencies" to the Upper Colorado River Basin Fund gives a priority to power generation in the lower basin over storage of water in the upper basin, a clear inconsistency with the Colorado River Compact.

Hoover Dam, Powerplant

Sentinel Photo

C. The purpose of Hoover Dam powerplants is to generate energy, the proceeds from which are to pay assigned costs of the Boulder Canyon Project. The purpose originally was not, and should not continue to be, the perpetuation of a cheap supply of firm power — especially at the expense of another project.

D. Making Hoover Dam power contracts whole at the expense of the Upper Colorado River Basin Fund is inequitable and unnecessary because the Secretary of the Interior under the Boulder Canyon Project Act, Boulder Canyon Project Adjustment Act, and his own regulations thereunder has the authority to make any necessary adjustments to meet the primary purpose of the Hoover powerplants.

E. Neither the Colorado River Basin Project Act nor the Congressional Committee reports preclude the prompt termination by the Secretary of the 1962 filling criteria.

F. Procedures used to charge the "deficiencies" to the Upper Colorado River Basin Fund are detrimental to the resource development program of the upper division, adversely affect payment of project costs, and are not consistent with the equitable operation intended under Section 602.

G. If filling criteria are retained along with the operating criteria of Section 602 the adverse effects of the "deficiency" charges will be prolonged. The basic principles of Section 602 will be largely negated during the next seventeen years unless the Secretary takes prompt action to terminate the filling criteria.

H. Contract firm energy cannot be generated by the Hoover powerplants with current releases of water limited to downstream consumptive use requirements. If water were to be released from Lake Mead in sufficient quantities to make contract firm power, the "deficiencies" could be eliminated or greatly reduced — but such releases would waste water.

I. Limiting releases of water from Lake Mead to consumptive use requirements salvages water for future use in and benefit of the lower basin. Charging the Upper Basin Fund for the effects of such salvage on firm power generation is inequitable.

J. If it is assumed to be equitable to replace with upper basin resources the Hoover powerplant "deficiencies" attributed to storage of water in upper basin reservoirs **below minimum power head,** the upper division had already more than met any obligation to replace "deficiencies" caused by storage of water for minimum power head in upper basin reservoirs.

K. In the event the filling criteria are not terminated, replacement of the "deficiencies" could logically be charged to lower basin interests because the water between the amount necessary for downstream consumptive uses and that necessary for Hoover firm energy generation is being stored for the benefit of lower basin consumers.

L. To continue the filling criteria and the charging of "deficiencies" thereunder to the Upper Basin Fund has the effect of charging the upper division for that to which it is entitled under the Colorado River Compact and the provisions of Section 602 of P.L. 90-537.

The Westerner

Storage Of Water Now Key To Use In Future Drouths

First of Five Articles

By WILLIAM H. NELSON

Colorado and other Upper Colorado River Basin states must have water in reservoirs of the Colorado River Storage Project in order to expand uses of water from the Colorado River and its tributaries in the future.

The amount of water stored in the next few years in Lake Powell, Flaming Gorge Reservoir, Navajo Reservoir, and the three units of the Curecanti Project will determine how much water may be used in the future.

When there are periods of drouth in the future, water stored in the big holdover storage units may be released to meet basic commitments to Arizona, California, and Nevada.

Colorado, Wyoming, New Mexico, and Utah could then use more of their theoretical shares of Colorado River water than would be possible without the storage for exchange.

Congress authorized construction of the Colorado River Storage Project to provide the facilities to store the water the Upper Basin must have. The Bureau of Reclamation built and is operating most of the reservoirs needed for holdover storage. Power generated at hydro-electric plants at the big dams produce revenue to pay for the dams and plants.

In 1965 and 1966, when Arizona was anxious for congressional approval of the proposed Central Arizona Project, representatives of the Upper Basin states used this fact as a leverage to negotiate terms of a section of authorizing legislation to protect interests of the Upper Basin.

THE SECTION of the legislation that was to protect Upper Basin interests provided that details of operating criteria for the big reservoirs must be prepared by the secretary of the interior by July 1, 1970.

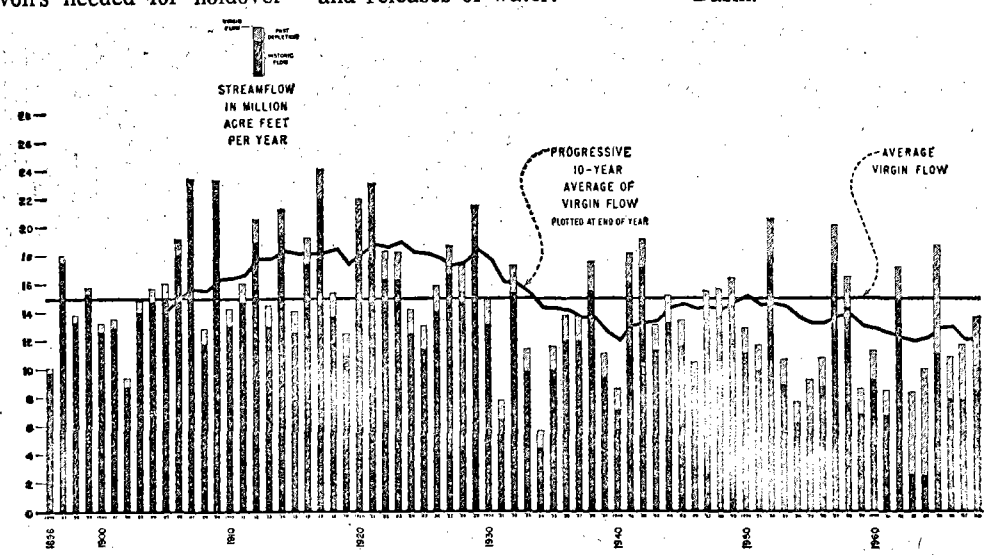
Criteria are rules, regulations, and schedules for storage of water, generation of power, and releases of water.

Now that the Central Arizona Project has been authorized and with Richard Milhous Nixon again claiming California as home, California and Arizona are boldly trying to dictate the terms of the detailed criteria in their favor.

The Lower Basin states want the coordinated long-range operating criteria for Colorado River reservoirs to be "administered consonant with applicable federal laws, contracts, the Mexican Water Treaty, interstate compacts, and decrees relating to the use of waters of the Colorado River."

UPPER BASIN states object vehemently to including contracts in the list and to elevating the contracts to the same status as the compacts and the treaty, to which the contracts are subservient. California is now diverting up to 800,000 acre-feet of water annually above the Supreme Court decree under contracts.

The Upper Basin states will ask for different wording concerning federal laws and decrees, because every federal law and court decree involving use of Colorado River water is not applicable to all water use entitites in the Colorado River Basin.



COLORADO RIVER flow at Lee Ferry, Ariz. This Bureau of Reclamation chart shows the fluctuations of flow of the Colorado River and why storage is necessary to hold water from wet year to dry years, wet cycles to dry cycles. Historic flow is the measured flow, Virgin flow is the computed total amount of water that would have been in the stream if man had not put some of it to use.

The Westerner

Sunday March 22 1970

Choice Of Words For Criteria Involved In Water Argument

Second of Five Articles

Choices of words in a number of paragraphs of the Colorado River Criteria are a bone of contention between the Department of Interior, Arizona, and California on one side and the Upper Colorado River Basin states on the other.

Points of controversy include the following:

FUTURE MODIFICATION of the rules, regulations, and schedules for operation of the big holdover storage reservoirs on the Colorado River. The Dec. 16 draft sent by Walter Hickel, secretary of the interior, to governors of all seven states of

By WILLIAM H. NELSON

the Colorado River Basin states that he reserves the right to modify the criteria and that a formal review with participation by states and other parties deemed appropriate by the secretary will be made each five years.

The Upper Basin states propose that the wording permit the secretary to modify the criteria and to sponsor a formal review once every five years with participation by state representatives designated by governors and such other parties and agencies as the secretary and governors deem appropriate.

The Upper Basin's position is that the wording of the criteria should conform more closely to the Colorado River Basin Project Act, and the Upper Basin water men believe the wording of the Dec. 16 draft emphasize the powers and responsibilities of the secretary at the expense of the governors.

Review once each five years would probably mean that a new secretary of interior would be involved each time. Federal agencies usually try to give federal officials more power than governors and federal agencies more prestige and more authority than states.

Upper Basin water men see the intervention of California and Arizona in preparation of the Dec. 16 draft because the two Lower Basin states hope to dictate to whoever holds the post of secretary.

PLAN OF OPERATIONS — The list of purposes for the Colorado River reservoirs included in the section on plans of operations in annual reports is too broad, according to Colorado, Utah, New Mexico, and Wyoming. The Upper Basin's position is that the section of the Basin Project Act concerning the criteria was designed to preclude some of the purposes listed in the Dec. 16 draft.

OPERATION OF UPPER BASIN RESERVOIRS — Two factors listed as relevation by the Interior — Lower Basin draft should be eliminated. The first is a report by a committee Oct. 30. This report is not a relevant factor but is merely a disseration on a study of relevent factors under a number of assumed parameters, according to the Upper Basin group.

A parameter is a figure arbitrarily used in computation.

The Upper Basin's position is that an unreasonably slow rate of growth in the Upper Basin was used by the committee making the report. Other false assumptions were used, according to an analysis by the staff of the Upper Colorado River Commission.

The second factor in dispute is "The necessity to assure that upper basin comsumptive uses not be impaired because of failure to store sufficient water to assure deliveries" of water by the Upper Basin to the Lower Basin under provisions of the Basin Project Act. The commission staff argues that this paragraph is the basic reason for the criteria and should not be classed as just a "relevant factor."

Relevant is one of the most overworked words in modern usage, in the opinion of the Westerner.

Irrigation Water Slated To Flow Early In April

3/27/70

Water will be turned into canals in the Grand Valley approximately the first week in April, depending on the speed with which frost leaves the ground in shade areas to permit ditch cleaning.

The turn-in date at this time is approximate because some farmers have indicated they will not be ready for the water until they can get to the fields to get their laterals cleaned — a process hampered by the frost.

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Snow Depth Shows Increase For Two Slope Watersheds

Snow on nine measurement courses on the watersheds of the Roaring Fork and White Rivers and the water content of the snow late in March were above those a month earlier.

The snow on seven of the courses and the water content were above the readings one year ago.

The water content of the snow on five was above average.

The courses follow: McClure Pass No. 1, elevation 9,500 feet on the pass; McClure No. 2, a new course, exact location not listed; North Lost Trail, elevation 9,200 feet, three miles up the Crystal River from Marble; Last Chance, elevation 9,600 on Last Chance Creek; Chapman, elevation 9,400, Chapman Creek; Nast, elevation 8,700; Fryingpan River Kiln, elevation 9,500, North Fork of the Fryingpan; Ivanhoe elevation 10,400, Ivanho Creek near Ivanhoe Lake; Burro Mountain, elevation 9,000, Flattop country, 13½ miles south of Buford; and Rio Blanco, elevation 8,500, six miles below Trappers Lake.

The Soil Conservation Service reported that soil moisture was good in the Roaring Fork watersheds.

The data on the measurements follow:

STATION	April 1, 1970 Snow Depth (in.)	April 1, 1970 Water Content (in.)	March 1, 1970 Snow Depth (in.)	March 1, 1970 Water Content (in.)	April 1969 Snow Depth (in.)	April 1969 Water Content (in.)	Average Water Content (in.)
McClure Pass No. 1	50.7	17.3	37.0	13.0	53.0	20.6	14.6
McClure Pass No. 2	49.1	15.8					
North Lost Trail	51.8	16.6	39.0	12.1	56.0	21.0	14.1
Last Chance	40.2	11.8	32.0	9.8	36.0	10.3	
Chapman	59.0	17.4	53.0	15.9	49.0	13.5	
Nast	29.1	8.0	26.0	6.5	28.0	7.9	5.3
Kiln	46.5	14.1	44.0	11.8	43.0	11.9	
Ivanhoe	69.0	23.3	62.0	19.5	58.0	17.2	17.9
Burro Mountain	60.9	20	48	15.3	51	19.4	17
Rio Blanco	50.6	16.6	38	14.9	47	16.4	15.8

4/11/70

Adams State College, Alamosa. This is the tenth clinic for stu-

Red Stoker, director of Parks and Recreation, "It won't happen again." "All trimmings and brush are

Engineers, Aides Working On Water Right Tabulations

By WILLIAM H. NELSON
Sentinel Staff Writer

Editor's note: This is the second of four articles on the new water laws.

Four water division engineers and their assistants are working on tabulations of all water rights within their respective territories.

The tabulations are to be completed by July 1, and to be published no later than July 10 in one newspaper of general circulation in each county within a division.

The tabulations will cover all absolute and conditional water decrees.

Lists of decrees were formerly tabulated by stream and by water district. Each new tabulation will cover what is defined under the law as a common source and could involve an entire water division.

The 1970 tabulation will be strictly administrative. From priority dates given decrees in the past, a division engineer will find the place for each right in the master lists for his division.

The division engineers are Wes Signs of Steamboat Springs, both Yampa and White Rivers; Don Smith of Glenwood Springs, Colorado River from Grand Lake to the Utah line; Ralph Kelling of Montrose, Gunnison, San Miguel, and northern part of the Dolores River; and W. George Barclay of Durango, San Juan River and tributaries and southern part of the Dolores River.

The district tabulations will be mailed to persons who pay $2 fees for this service.

Objections may be made to the division engineers by Sept. 10. The engineers will make what revisions they decide are warranted by Oct. 10.

Publication of the revised tabulations must be made by Oct. 20.

New tabulations will be made by July 1, 1974. These will reflect all changes in decrees during the intervening four years. Such things as conditional rights that have been made absolute, new rights that have been approved, and rights that have been abandoned.

The division engineer must investigate all rights which are to be considered abandoned.

Following the publication of the tabulation in 1974, water users will have the same right to object.

An attempt was made in the General Assembly this year to amend the section concerning tabulations to give the division engineers more time, but the effort was defeated. The unsuccessful amending effort also included publication of only changes in the tabulation instead of the complete list in 1974 and every two years after that.

If no court test of the 1969 law has been filed before the 1974 tabulations, the requirement to consider abandonment of water rights that have not been used will probably spark a rash of court cases then.

Decisions by the water courts on abandonment will be ideal material for appeal to the Colorado Supreme Court.

Legislation to amend the 1969 act regarding abandonment of water also failed in the legislature this year.

District courts provided copies of decrees to two division offices in several instances where a county is in two divisions. Mesa County is an example. The part of this county tributary to the Colorado River is in Division 5; the part tributary to the Gunnison in Division 4.

E. D. (Bud) Bloye, formerly of Hot Sulphur Springs, has accepted the post of assistant engineer for Division 5 with headquarters at Glenwood Springs. A registered professional engineer and land surveyor, former Grand County county surveyor, and former water commissioner for districts 50 and 51. Bloye is assisting Smith with tabulations of water decrees as current administrator of water rights.

Mt. Sopris Conservationists Discuss Future Water Needs In Our Community

Meeting in the Carbondale Methodist Church Thursday, March 19, the Mt. Sopris Soil Conservation District landowners heard reports and discussed problems.

Theme of the session was "Let's Look to the Future." J. R. Rinckel and L. J. Crabtree, representing the Bureau of Reclamation, reviewed the proposed Basalt Project. The proposed project lies between Aspen, Basalt and Glenwood Springs, and includes the Roaring Fork River and its tributaries in Garfield, Pitkin and Eagle counties.

Multi-Use Project

The muti-use project would utilize controlled storage releases from the Ruedi Reservoir on the Frying Pan, plus natural flows from Cattle, Sopris, Prince, Coulter and Mesa Creeks. The Basalt Conduit would convey Ruedi Reservoir releases to the now existing Missouri Heights Reservoir for an enlargement of the reservoir and re-regulation and delivery to project land. Landis Canal would carry water to Cattle Creek, Spring Valley and Spring Valley Bench. Carbondale Canal would siphon Roaring Fork River for lands south of the river. Irrigable acres and water needs for irrigation have not been completely determined.

Municipal and Domestic Water, Too!

Municipal and domestic water also enters the picture. Towns of Basalt and Carbondale, Colorado Mountain College and surburban areas adjacent to the college would have future needs. Basalt's domestic water would come from the Basalt Conduit and the other users from the conduit terminus, outlet of Spring Park Reservoir (Missouri Heights), or from Landis or Carbondale Canals.

Storage Sites

Storage sites on Cattle Creek were selected for study for additional water needs in the Aspen-Roaring Fork area. Initial projections for municipal and domestic water needs follows: Basalt, 3,600 acre feet (other figures are in acre feet), Carbondale, 3,6000; College Area, 4,000; Spring Park (Missouri Heights), 3.600; Roaring Fork Valley, 8,000 and Roaring Fork Valley between Basalt and Carbondale 3,600 or a total of 26,-400 acre feet.

Reservoir Proposals

There are proposals for three reservoirs in the plans, Spring Park, a dead storage pool and a site on Castle Creek. The capacity of none of these has yet been completely determined. Three canals have also been proposed; they are Basalt, Landis and Carbondale. It was stressed these plans are only preliminary and may be changed.

Jerry Gamba of the Eldorado Engineering Co., spoke on the sewage problems of the district. He pointed out the possibilities of a gravity system to serve the area from Basalt to Carbondale. In suggesting such a feasibility study, he reflected that most present systems can't keep up with the population growths.

Ute Conservancy Dist. Speaks

In an interesting sidelight, members of the Ute Conservancy District, embracing lands between Palisade and Utah line, reviewed the problems and accomplishments they have met along the way of five years of existence and twenty years of planning.

They said that in the five years of operation, meters served have increased from an initial 1800 to 3100 or an increase of 13%, a big jump in any man's language. They said in the Ute District is in "good" financial shape, the water is "fine", and the system is "well-constructed." They are getting their debt paid, but there were many problems encountered in getting the job done.

Moisture Content Increases Normal Over Colorado West

March precipitation in the Colorado River above Cisco, Utah, varied from near normal in the upper reaches of the mainstem to near 200 per cent of average over west central Colorado, according to the Weather Bureau.

Forecasts of stream flow by the agency dropped 5 to 10 per cent for the Colorado above Glenwood Springs, but forecasts for the Roaring Fork River and Gunnison went up about 5 per cent.

In the Green River Basin, March precipitation was 80 per cent or less of normal in lower elevations, with higher areas receiving 85 to 95 per cent of normal precipitation.

The data:

The stream flow forecasts given are for April through September unless indicated otherwise.

Colorado River: Inflow to Lake Granby, 275,000 acre-feet, 125 per cent of average, 220,000. The Bureau of Reclamation's most probable inflow forecast for April-July period was 225,000 acre-feet.

Colorado River at Glenwood Springs: 1,830,000 acre-feet, 127 per cent of average, 1,445,000; near Cisco, Utah, 3,800,000 acre-feet, 119 per cent of average 3,190,000; inflow to Lake Powell, 7,500,000 acre-feet, 103 per cent of average 7,470,000. The Weather Bureau's April-July inflow forecast was 6.8 million acre feet, same as one month ago.

Williams Fork River near Parshall: 82,000 acre-feet, 151 per cent of average 61,000.

Blue River inflow to Dillon and Green Mountain Reservoirs, 380,000 acre-feet, 134 per cent of average, 283,000. The Bureau of Reclamation's April-July prediction was 345,000 acre-feet.

Roaring Fork River at Glenwood Springs: 830,000 acre-feet, 120 per cent of average, 692,000.

Taylor River inflow to Taylor Reservoir: 135,000 acre-feet, 121 per cent of average, 112,000; at Almont: 145,000 acre-feet, 118 per cent of average, 123,000.

East River at Almont: 220,000 acre-feet, 116 per cent of average, 189,000.

Uncompahgre River at Colona: 155,000 acre-feet, 119 per cent of average, 125,000.

Gunnison River near Grand Junction: 1,500,000 acre-feet, 115 per cent of average, 1,135,000.

Dolores at Dolores: 225,000 acre-feet, 97 per cent of average, 231,000.

San Miguel River: 188,000 acre-feet, 120 per cent of average, 157,000.

Green River inflow to Flaming Gorge Reservoir: 1,040,000 acre-feet, 88 per cent of average, 1,187,000. The Weather Bureau's April-July forecast was 900,000 acre-feet, slightly lower than a month ago.

Green River at Green River, Utah: 2,820,000 acre-feet, 98 per cent of average, 2,884,000.

Yampa River near Maybell: 910,000 acre-feet, 107 per cent of average, 853,000.

White River near Meeker: 320,000 acre-feet, 109 per cent of average, 294,000.

San Juan River inflow to Navajo Reservoir, 475,000 acre-feet, 71 per cent of average, 671,000 acre-feet.

Los Pinos River inflow to Vallecito Reservoir: 145,000 acre-feet, 75 per cent of average, 194,000.

Animas River at Durango: 160,000 acre-feet, 86 per cent of average, 186,000.

* * *

Big Reservoirs Losing Water To Get Ready For Runoff

Water is being released from several large reservoirs to make way for runoff from the spring snowmelt in the high mountain watersheds.

Water from melting of snow in lower areas is being stored in smaller reservoirs.

The amounts of active storage at latest reports included the following:

Fruitgrowers (Hart's Basin), near Cory and Austin: 4,357 acre-feet. Capacity is 4,500 acre-feet.

Crawford, near Crawford: 11,072 acre-feet. Active capacity is 13,972 acre-feet.

Paonia, east of Paonia: 2,622 acre-feet. Active capacity is 18,330 acre-feet, but there has never been any difficulty filling the reservoir.

Rifle Gap, near [illegible]0,445 acre-feet. Active [illegible] 19[illegible]

east of Gunnison: 81,720 acre-feet. Releases Monday were 660 second-feet.

Reports of total storage in other reservoirs on which active storage figures were not available appear below. Active storage is the water that can be released through the outlet works. Total storage includes water below the outlet works that cannot be released.

The data:

Blue Mesa [illegible] Curecanti Project: 414,700 acre-feet. Recent releases fluctuated between [illegible]-feet and 1,850 second-feet. Total capacity is 940,720 acre-feet.

Morrow Point [illegible] Curecanti Project: 114,500 acre-feet. Recent releases near 1,645 second-feet. Capacity is 117,000 acre-feet.

Lake Powell, Utah and Arizona: 9,546,000 acre-feet. Recent releases varied from 7,225 second-feet to 10,595 second-feet.

Flaming Gorge Reservoir, Utah and Wyoming: 1,483,000 acre-feet. Recent releases ranged 880 to 1,810 second-feet.

Navajo Reservoir, New Mexico and Colorado: 861,000 acre-feet. Recent releases ranged from 1,000 to 1,500 second-feet.

The Westerner

Criteria, Power Decisions Decide Future Of Projects

Fourth of Five Articles

By WILLIAM H. NELSON

Upon how the current controversies between the Upper and Lower Colorado River Basins are resolved depends the future of several potential reclamation projects in Colorado West, according to Felix Larry Sparks, director of the Colorado Water Conservation Board.

Sparks told the Colorado Advisory Committee at a recent meeting in Denver that unless the Colorado River Criteria are revised to conform with the provisions of the Colorado River Basin Project Act of 1968, Colorado has just about used its share of Colorado River water.

Sparks stated categorically that unless the deficiency payments to Lower Basin power interests are ended, there is no money in the Colorado River Basin Fund at present to pay for new projects.

Representatives of the Bureau of Reclamation and Lower Basin states refused at meetings last year to talk about ending the deficiency payment.

The deficiency payments are part of criteria put into effect by the Department of the Interior to govern reservoir operations during the initial filling of Lake Powell.

Walter Hickel, secretary of the Interior, promised in a Dec. 16 letter to governors of the Colorado River Basin states that his department would review the 1962 criteria and announced a decision by July 1.

Hickel reitereated a contention of his staff that termination of the 1962 criteria is "separate and apart" from issuing

PARTICIPATING irrigation projects of the Colorado River Storage Project such as Paonia, Smith Fork, Silt, Battlement Mase, and Dallas Creek depend upon surplus revenues from sale of power generated at Glen Canyon, Flaming Gorge, Blue Mesa, Morrow Point, and Crystal Dam hydro-electric plants to repay much of the construction costs to the U.S. Treasury.

Some of the revenues are committed to pay for the deficiencies in generation of power at Hoover Dam during the filling of Lake Powell. With water being stored in Lake Powell, there was less water in Lake Mead to make power.

The Upper Basin states never approved the 1962 criteria nor the deficiency payment provisions of that document but allowed them to go into effect, much the same as a governor does not approve nor veto a bill he opposes but allows it to become law without his signature.

Sparks told the Advisory Committee that the commitments for projects already built or authorized will use all of Colorado's share of power revenues available at present.

It will be a decade before Colorado's share of money will build up again to the point that commitments may be made for new projects.

Battlement Mesa, Yellow Jacket, Blue Stone, and others in Colorado West are on the waiting list for authorization.

orado River Basin Project Act. The Upper Basin position is that the 1962 and the 1970 Criteria are inextricably linked.

"It is the unalterable position of the four states of the Upper Division," the Upper Colorado River Commission states, "that the present (1962) reservoir filling criteria and especially the charging of costs of the so-called 'deficiencies' in firm energy generation at Hoover Dam, to the Upper Colorado River Basin Fund must be terminated simultaneously with the adoption on July 1, 1970, of the long-range operating criteria of Section 602 of Public Law 90-537."

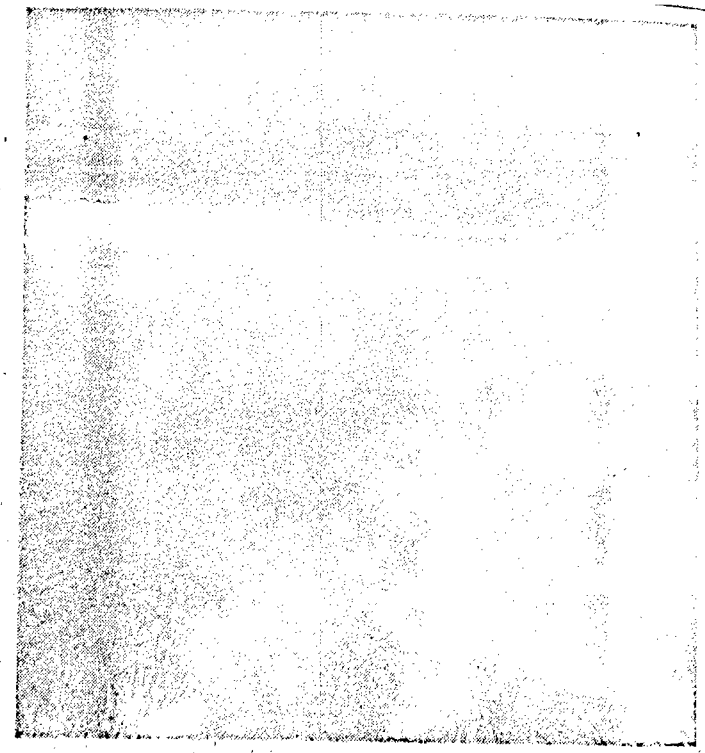
QUICK QUIZ

Q — What is the national sport of most South American countries?

A — Soccer.

Q — In what direction does the tail of a comet generally point?

A — Away from the sun, no matter in what direction the comet is traveling.



JOSEPHINE BASIN land southwest of Meeker would be among those receiving water from the proposed Yellow Jacket Project. Unless the Colorado River Criteria and power deficiency payments controversies are resolved to the benefit of the Upper Colorado River Basin states, there may be neither water nor Money for the project.

Bureau of Reclamation Photo.

VII WATER RIGHTS

A. Tabulation

Status of correction is approximately 2/3 completed with an estimated 3 weeks to 1 months time needed for satisfactory completion of objections on hand. Estimated corrected cards already submitted is 1200 with an estimation of 400 cards needing correction.

Reaction from the public has generally been unfavorable with emphasis being that the time limit as specified by the State legislation was inadequate to permit an accurate tabulation.

B. Referee's findings and decrees

1.	Underground water rights	3
2.	Changes in water rights	3
3.	Plan for augmentation	0
4.	Water rights (new)	32
5.	Diligence (Cons decreed)	47
	Diligence (Dil due/2 yrs)	79
6.	Water Storage	13

Water diversion by wells in this area presents no problem. Three of the wells adjudicated are of small volume. There are many small wells in the division which are used for domestic and lawn irrigation . However, their flow is so small adjudication is not required. One of the adjudicated wells submitted a plan for augmentation. Their original water use was decreed for a ditch out of the Roaring Fork River. The well was drilled to acquire water for land higher in elevation than that covered by the ditch. When the well is pumping, the headgate of the ditch is shut down. Well pumps less than actual amount adjudicated for the ditch.

by dme

GENERAL INFORMATION

COUNTY	County Seat Location	Elevation	Land Area (1000 acres)	Number of Farms	Land in Farms (1000 Acres) Total	Land in Farms (1000 Acres) Crop Land	Land Irrigated Farms Being Irrigated	Land Irrigated Acres Irrigated	Length of Growing Season Days	Annual Precipitation inches
19 Eagle	Eagle	6,600	1,078	170	279	31	139	34,766	55	12 -35
23 Garfield	Glenwood Spgs	5,746	1,916	520	510	79	448	54,242	143	11 -40
25 Grand	Hot Sulphur Spgs	7,670	1,178	150	335	52	122	41,030	16	12 -35
49 Pitkin	Aspen	7,908	623	90	100	16	60	15,332	73	20- 35
59 Summit	Breckenridge	9,603	392	30	45	9	24	9,629	NA	16 -30
39 Mesa	Grand Junction	4,586	2,120	1,750	590	107	1,610	108,134	192	8 -30

X. Recommendations and Suggestions.

Tabulations and Water Commissioner Ditch Reports and Dam Report, "the new system" this year was the major part of the work. As we progressed through the season the Dam Section was quite active and more records of inspection were completed than ever before. Due to the untimely death of Mr. D.L. Smith the Division Engineer, limited time was allowed for this report and especially the amount of time required to search the records that were foreign to myself as all our effort was on cards and such makes this a rather skimpy one.

In conclusion I wish to thank Mr. Kuiper and all the staff personnel for their efficient cooperative assistance to me this year, and in particular Mrs. Dorothy Else, our Secretary whose love and devotion to Mr. Smith made this report at all possible.

Sincerely yours,

E.D. Bloye

E.D. Bloye
Ass't. Div. Engineer